

WHAT IS CLAIMED IS:

- SUB
a'
1. A tube or cigarette conveyor for a do-it-yourself cigarette maker comprising:
 - a tube hopper for receiving a supply of empty cigarette tubes,
 - a discharge device for a tube, which is to be filled with a tobacco material,
 - a holder means for holding said tube during the filling operation, and
 - a cigarette hopper for receiving the filled cigarettes, said discharge device being a lifting device which raises a tube from below out of said tube hopper, wherein said lifting device comprises a pusher, the top edge of which has a longitudinal recess.
 2. The tube or cigarette conveyor as set forth in claim 1, wherein said pusher in said tube hopper is arranged so that said longitudinal recess, in the lowered condition, forms part of the bottom at the lowest point of said tube hopper.
 3. The tube or cigarette conveyor as set forth in claim 1 or 2, wherein said pusher is arranged at a straight wall of said tube hopper, along which it is raised, deflectors being arranged at the upper part of said wall, which are capable of returning all raised tubes back into said tube hopper, except for the one located in said recess of said pusher.
 4. The tube or cigarette conveyor as set forth in claim 3, wherein said deflectors comprise at least one, but preferably two, pivot clips oriented transversely to said longitudinal recess of said pusher and initially coming to rest on said raised tube upon raising of said pusher, while, upon a further raising, they slide past said tube into slots in said pusher so that they are located underneath said tube and transport said filled cigarette into said cigarette hopper upon lowering of said pusher.
 5. The tube or cigarette conveyor as set forth in claim 4, wherein said clips are arranged on a common pivoting axis and are pre-tensioned by means of a lever weight in the direction of rotation so that, upon raising of said tube, their middle sections initially lightly press on said tube, while their front sections deflect further tubes.

6 The tube or cigarette conveyor as set forth in any of the claims 1 to 5, wherein said means for holding said tube during said filling procedure comprises a recessed surround which surrounds the tube or cigarette from above at least in part.

5 a 7. The tube or cigarette conveyor as set forth in claim 6, wherein said longitudinal recess of said pusher, in the raised condition, together with said recessed surround of said holder means, substantially completely surrounds said tube during said filling procedure.

10 8. The tube or cigarette conveyor as set forth in claim 6 or 7, wherein said holder means comprises sensors, in particular a photocell, which detects the presence of a tube or cigarette or the empty condition of said holder means.

15 9. The tube or cigarette conveyor as set forth in any of the claims 1 to 8, wherein said tube hopper and/or said cigarette hopper are configured as drawers, in particular at least the bottom of which is configured latticed, and preferably a removable catchment vessel for the tobacco material is provided below said tube hopper and/or said cigarette hopper.

20 10. A tobacco rod shaping means, in particular for a do-it-yourself cigarette maker, comprising:

- a funnel-shaped tobacco material infeed section,
 - a singling device for said tobacco material, and
 - a tobacco rod compression means, said singling means being a roller, partly
- 25 surrounded by a housing, with plucking means arranged at the circumference of said roller, in particular a plucking roller with plucking pins, by means of which said tobacco material is conveyed into said tobacco rod compression means, wherein a wall section is pivot-mounted so that it can be pivoted out of the way of said roller from a secured working position in order to remove excess tobacco
- 30 downwards, where it can preferably drop into a removable catchment means.

11. The tobacco rod shaping means as set forth in claim 10, wherein said funnel-shaped infeed surface comprises at least one wall section oriented radially to said roller axis.

a 5 12. The tobacco rod shaping means as set forth in claim 10 or 11, wherein said tobacco rod compression means comprises a tobacco chamber, which can be opened up and closed by at least one side, the travelling side part of said chamber preferably being shifted by means of a cam from the opened position into the closed position, in overcoming a spring preload, and the opening width of the chamber is preferably settable
10 by means of a positioner.

13. The tobacco rod shaping means as set forth in any of the claims 10 to 12, wherein said wall sections, surrounding said tobacco rod to be shaped, are provided with an anti-stick coating

15 14. The tobacco rod shaping means as set forth in any of the claims 10 to 13, wherein said roller is inserted removable.

20 15. The tobacco rod shaping means as set forth in any of the claims 10 to 14, wherein said plucking roller is made of a material resistant to corrosion, for example aluminum, preferably with an AlO₂ surface finish.

25 16. A tobacco rod conveyor for a do-it-yourself cigarette maker comprising a tappet, for shuttling in and out of a chamber containing a tobacco plug, wherein said tappet comprises an outer tube, in which a guide rod runs, said guide rod comprising at its front end an insertion aid for said tobacco rod.

30 17. The tobacco rod conveyor as set forth in claim 16, wherein said guide rod comprises at its rear end an appendage, by which it can be withdrawn in overcoming the pressure of a spring provided in said outer tube, said insertion aid for said tobacco material thereby entering said outer tube.

18. The tobacco rod conveyor as set forth in claim 16 or 17, wherein said insertion aid has substantially the length of said tobacco rod and is shaped so as to assist pushing of said tobacco rod only in the conveying direction, and is configured, for example, as a toothed blade, a shingled scoop or spiral guide.

19. The tobacco rod conveyor as set forth in claim 16 to 18, wherein said tappet is shifted back and forth at its rear end by means of an eccentric drive, preferably a support engaging with said eccentric drive, in particular a retaining lever, holds said outer tube in position upon removal of said guide rod after conveyance of said tobacco rod.

20. A tube aligning device, especially as provided for a do-it-yourself cigarette maker, comprising a receiving element for said tube consisting of a circular gap between a housing and a mandrel secured in said housing, wherein said circular gap comprises substantially the axial length of a cigarette tube and at the insertion end a device is provided with which said circular gap can be constricted.

21. The tube aligning device as set forth in claim 20, wherein said constricting device comprises a clamping screw, for screwing to said insertion end, as well as collets, arranged between mandrel and housing, said gap between said collets and said mandrel being constricted by turning said clamping screw.

22. The tube aligning device as set forth in claim 19 or 20, wherein, in the region of said collets, an O-ring may be provided around said mandrel, at which preferably an adapter ring is arranged for fixing and centering.

23. A do-it-yourself cigarette maker comprising one or more of the following component assemblies:

- a tube or cigarette conveyor as set forth in claims 1 to 9;
- a tobacco rod shaping means as set forth in claims 10 to 15;
- a tobacco rod conveyor as set forth in claims 16 to 19;
- a tube aligning device as set forth in claims 20 to 22.

24. The do-it-yourself cigarette maker as set forth in claim 23, wherein it furthermore comprises motors, more particularly electric motors for said components to be driven, as well as a preferably electronic sequence control which, with the aid of sensors, monitors and regulates the operating condition in each case and in particular provides an external indication thereof by display means.

25. The do-it-yourself cigarette maker as set forth in claim 23 or 24, wherein said tappet of said tobacco conveyor, said tobacco compression chamber of said tobacco rod shaping means, and said tube holding means, for holding said tube during said filling procedure, are all arranged in line, these components being configured so that, upon removal of said tappet, a through hole exists in this line.

add B2